Welcome Commonwealth **Emergency Response** New Madrid Seismic Zone Plan Brief PHOED WE FA

9 March 2011

BG John W. Heltzel

Kentucky
Division of Emergency Management





Agenda Overview

New Madrid Threat and Assessment Overview	COL Charlie Harris
Emergency Management Response Overview	Mr. Charlie O'Neal
Emergency Medical and Health Response Overview	Dr. William Hacker
Guard Response Overview	Director John Heltzel
Unified Area Command and RECC Complex	Mr. Harry James
County Missions and County Responsibilities	Mr. Harry James
National Level Exercise Overview	Director John Heltzel
Questions and Answers	Director John Heltzel
Lunch	
Public Health Preparedness Issues and Answers	Dr. William Hacker
Break	
Commonwealth Emergency Response Commission Meeting	Chairman J. Heltzel

Imagine

- No Power
- No Communications
- Severely Degraded Road Network
- Widespread Flooding
- Major loss of Infrastructure
- Limited Shelters

Imagine: February

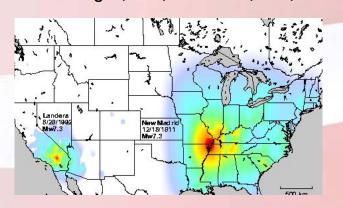


NLE 2011 New Madrid Seismic Zone: The Challenge in New Madrid

- NMSZ = Huge Fault, Huge Damage, Huge Impact
- 150-mile long fault from Arkansas through Missouri, Tennessee & Kentucky to Illinois
- Significant national impact
 - Ripple effect across America
- Potential for greater effect than quake in CA
- Central U.S. earthquakes on 200-year cycle
- Northridge, CA cost approx \$40B in 1994
- Estimated building loss -- \$70B
- Tremendous impact on critical infrastructure
- 44M people live in eight-state region
 - 12M in high risk area
- Severe weather & significant evacuation issues



Northridge (6.7M) vs. 1886 (6.8M)



Landers, CA (7.3M) vs. 1812 (7.3M)



Kentucky Assessment Overview



- Approximately 235,000 people will seek shelter
- Estimated 435 25 Ton truckloads of commodities (water, ice, MREs) will be required to support the at risk population
- Over 76,000 households are without potable water service
- Nearly 330,000 households are without electric power (Day 1)
- There are approximately **6,500 injuries** and **300 deaths**
- Approximately 68,500 buildings are damaged
- Over 250 bridges are damaged

New Madrid Threat and Assessment Overview

COL Charles Harris
J2 - Intelligence Officer



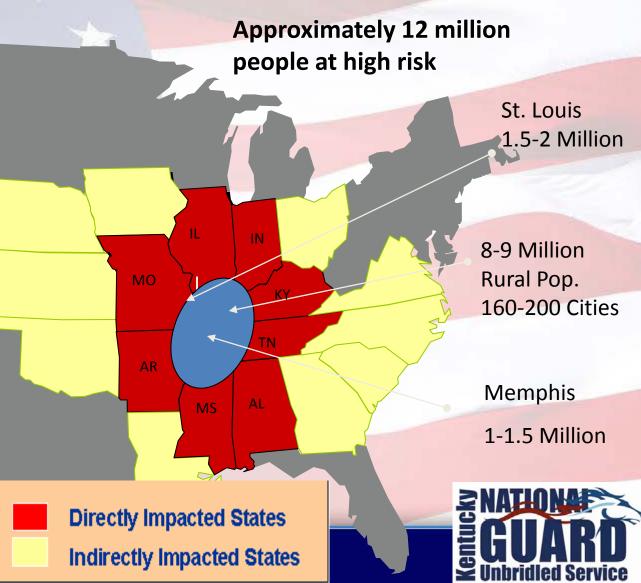
Natural Disaster - Major Earthquake





- No notice event that is not commonly recognized
- Consequences eclipse Katrina
- Large area of impact126,575 Sq. Miles
- Multiple jurisdictions with multiple governors
- Significant infrastructure impacts
- Response problems during multiple aftershocks
- Poor situational awareness
- Security demands
- Mass care/shelter needs
- Major housing, evacuation, & relocation needs
- Urban & Isolated areas

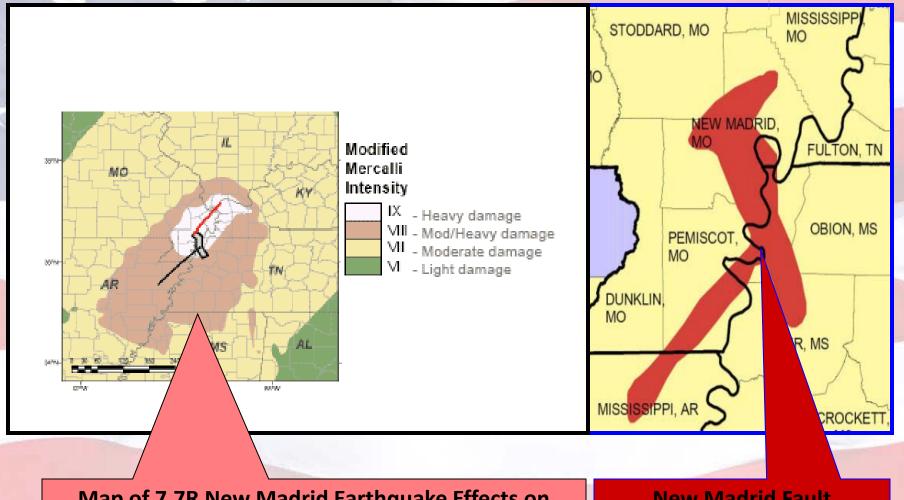
New Madrid Seismic Zone: The Response Challenges





New Madrid Seismic Zone





Map of 7.7R New Madrid Earthquake Effects on Structures (Mercalli Scale)

New Madrid Fault (from CERI)



- 30,314 highway bridges and over 86,000 miles of highway in 230 counties
- Transportation systems most effected by EQ in northeast AR or western TN
- Greatest regional impact to AR, MO & TN with approx. 85% (\$3.4 B) of highway losses

	No. High		ghway Bridge Damage		nctionality	Direct Economic Loss
	Highway	Moderate	Complete	Day 1	Day 7	Highway
Alabama	1,935			98.8%	99.6%	\$251,000
Arkansas	2,879			76.7%	80.6%	\$1,590,988,000
Illinois	6,554			97.7%	98.1%	\$171,264,000
Indiana	2,214	1,987	530	99.6%	99.8%	\$2,636,000
Kentucky	2,082	1,901	530	92.2%	93.7%	\$355,964,000
Mississippi	4,032			93.7%	95.9%	\$119,202,000
Missouri	7,803			91.8%	93.1%	\$923,199,000
Tennessee	2,815			90.2%	92.1%	\$903,136,000
TOTAL	30,314			28,356	29,142	\$4,066,640,000

Utility Pipeline Networks and Service

- Largest losses of electricity and potable water in MO & TN
- Greatest pipeline damage incurred by potable water lines, though highest break rates in natural gas lines
- Economic losses for pipelines are nearly \$2 billion, or 16% of regional utility losses

	Households without Water		Household Elect		Total Households
	Day 1	Day 7	Day 1	Day 7	nouseriolus
Alabama	0	0	0	0	248,471
Arkansas	139,438	119,529	6,731	1,959	519,225
Illinois	87,601	37,623	39,058	14,188	524,859
Indiana	43,628	4,403	0	0	188,251
Kentucky	134,323	92,805	65,367	25,302	253,853
Mississippi	19,180	2,236	0	0	275,342
Missouri	163,558	96,267	76,114	31,030	1,184,976
Tennessee	348,187	304,363	37,244	11,562	1,041,220
TOTAL	935,915	657,226	224,514	84,041	4,236,197

Only major distribution lines shown here

100	Length of Pipe (mi)	No. Breaks	No. Leaks
Potable Water	311,034	41,246	65,795
Waste Water	186,620	32,622	52,038
Natural Gas	124,413	33,430	49,860
Oil (Major Dist. Lines ONLY)	8,003	7,460	1,951
TOTAL	630,070	114,758	169,644

NLE 2011 New Madrid Seismic Zone: Railway Networks & Airports

- 425 railway bridges and nearly 28,000 miles of track in 230 counties
- Greatest damage in Memphis area; most bridges and airports non-operational

	Regional Quantity	Structura	l Damage	Component Fu	nctionality	Direct Economic
		Moderate	Complete	Day 1	Day 7	Losses
Railway Bridges	425	9	0	416	421	\$330,879,000
Railway Facilities	393	85	0	358	376	
Airport Facilities	637	64	8	596	624	\$400,673,000
Port Facilities	691	109	14	638	660	\$228,239,000
TOTAL						\$628,912,000

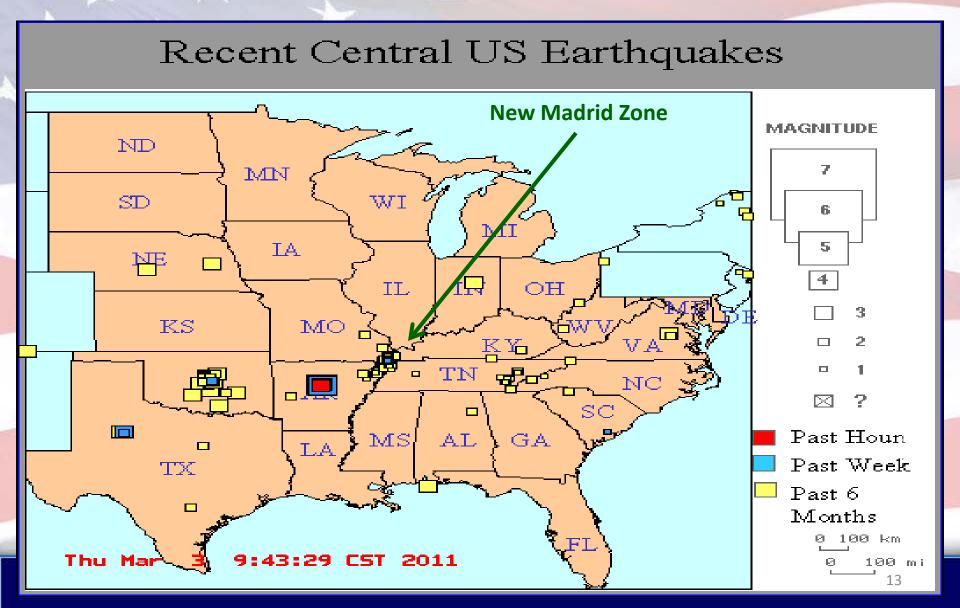
New Madrid Seismic Zone: Utility Facilities

- Utility lifelines most affected by EQ in southern IL/ southeast MO
- Most damage and economic loss to utility facilities incurred by waste water facilities
 - 75% of all utility facility damage
- Most severe damage to facilities in southern IL, southeastern MO and western KY

	No. of	Facility Struc	tural Damage	Facility Fu	nctionality	Direct
	Facilities	Moderate	Complete	Day 1	Day 7	Economic Loss
Potable Water Facilities	249	36	2	213	238	\$810,170,000
Waste Water Facilities	1,646	162	14	1,295	1,571	\$8,389,390,000
Oil Facilities	49	1	0	47	49	\$8,320,000
Natural Gas Facilities	114	12	0	102	111	\$200,000
Electric Power Facilities	158	16	0	130	155	\$1,307,810,000
Communication Facilities	940	98	6	883	932	\$7,020,000

TOTAL: \$10,522,910,000

New Madrid Seismic Zone: Current Intelligence



New Madrid Seismic Zone: 24 Counties of Direct Concern

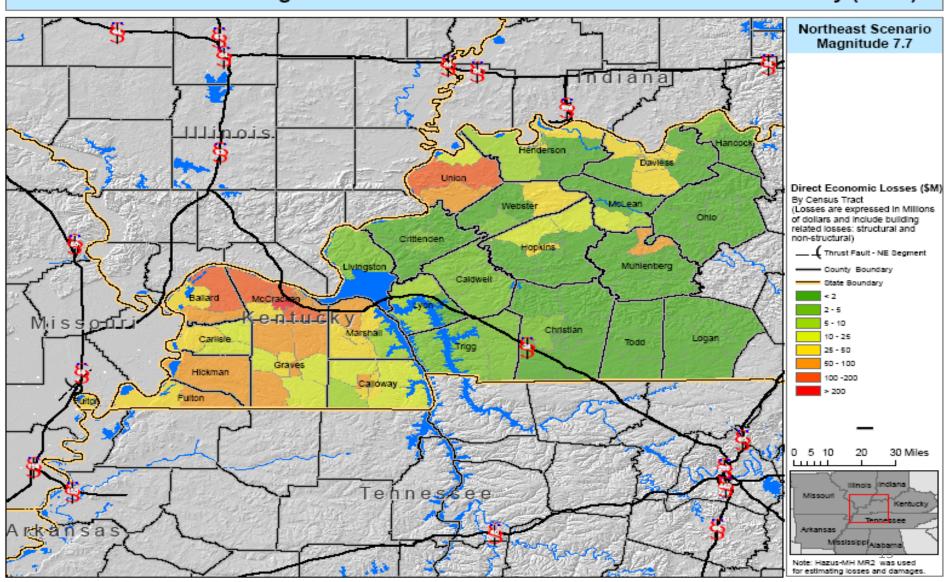
Impact Counties:

Ballard, Caldwell, Calloway, Carlisle, Christian, Crittenden, Daviess, Fulton, Graves, Hancock, Henderson, Hickman, Hopkins, Livingston, Lyon, Marshall, McCracken, McLean, Muhlenberg, Ohio, Todd,



So, What Does This Mean?

Estimated Total Building Loss- New Madrid Seismic Zone Scenario : Kentucky (West)





Expected Structural Damage



General Occupancy Type Damage (Critical Counties)

Type	Total	Mod	derate to	Complete
	No. Buildings	Seve	re Damage	Damage
1				
Single Family	189,655		38,707	18,652
Other Residentia	50,493		10,619	9,619
Commercial	1,682		259	475
Industrial	265		37	53
Other	242		29	60
Totals	242,337	49	9,651	28,859

32%

Of Structures with Moderate to Complete Damage



In Relation to Time of Earthquake



Time	Injured	Hospitalized	Dead
2 am	4,500	1,300	245
2 pm	4,400	1,550	360
5 pm	4,000	1,500	323
2 hiii	4,000	1,500	323



Select Infrastructure Expected Damage



Essential Facilities Damage & Functionality (State)

Type	Total No.	Facilities At Least Moderate Damage		
Hospitals	135	6	4	
	4.046			

Schools	1,846	98	79

Police	407	23	19
Stations			

Fire	1,066	77	61
Stations			



Expected Basic Services Losses



Debris

120,000 truck loads of 25 tons each

Services

- Water, waste water, electrical service, and other public utilities will take months to restore basic services.
- Major pipelines supplying the US Northeast will likely suffer numerous breaks.
- Damage to the roadways and bridges could take years to repair.
- Continuity of Government will be vital to providing services to Kentuckians affected by this catastrophic event.

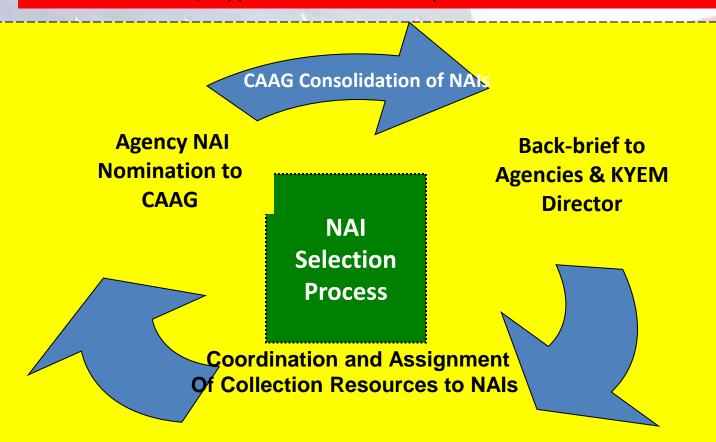


Nomination of New Madrid Seismic Event

Named Areas of Interest (NAIs)

NAIs are identified entities, such as infrastructure and terrain, that we consider of such particular importance to our mission's success that we want to know their status.

Why important?: NAIs should direct the Incident Awareness and Assessment (IAA) process. IAA is focused upon NAIs.





NAI Nominations to Have:

- a. Who nominating
- b. Recommended NAI (Name)
- c. NAI address and Lat Log
- d. Justification
- e. Suggested collector to evaluate NAI in case of disaster.



Named Areas of Interest (NAIs)



Tier 1 & Tier 2 NAIs and Main Supply Routes



Tier 1 Examples



Tier 2 Examples



County Hospitals and Nursing Homes

County EOCs

MSRs



MSR Hilltopper:

Highways Nunn/68/80

MSR Wildcat:

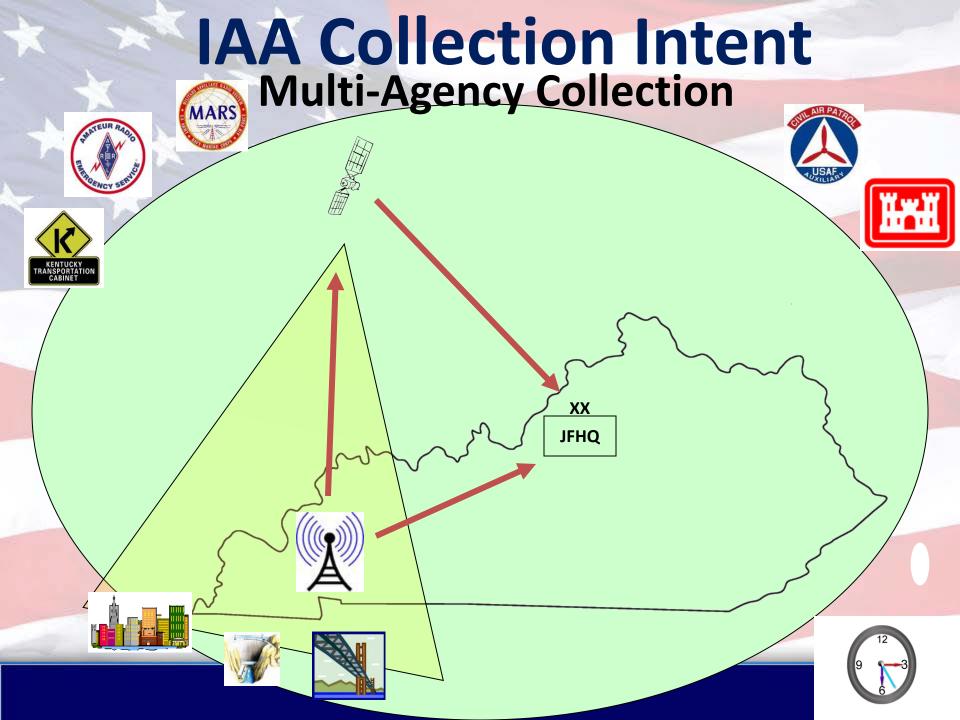
Western KY Parkway and Highway 62

Kentucky Dam

Paducah Gaseous

Diffusion Plan

See NMSZ Collection Plan



Emergency Response Overview

Mr. Charles O'Neal
Assistant Director Of Operations







- Air Operations
- Search and Rescue
- Reducing Hazards and Suppressing Fire
- Providing Safety and Security and
- Delivering life saving and sustaining
- resources
- Command and Control
- Interoperable Communications









Recovery Assistance –

Mass Care and Sheltering to Impacted

Area

Local Shelters

Regional Shelters

Emergency Evacuation

Base Camp Support

Local Recovery

Long Term Recovery







Recovery Assistance

Provide Health and Medical Services

Emergency Medical

Emergency Evacuation

Health and Human Services





Essential Services – Infrastructure Restoration



Agriculture and Food



Banking and Finance



Chemical



Commercial Facilities



Communications



Critical Manufacturing



Dams



Defense Industrial Base



Emergency Services



Energy



Government Facilities



Healthcare and Public Health



Information Technology



National Monuments and Icons



Nuclear Reactors, Materials and Waste



Postal and Shipping



Transportation Systems



Water

Essential Services

Debris Clearance





Provide Accurate and Timely Situational Awareness



Debris Clearance & Situational Awareness

Mass Evacuation and Transportation



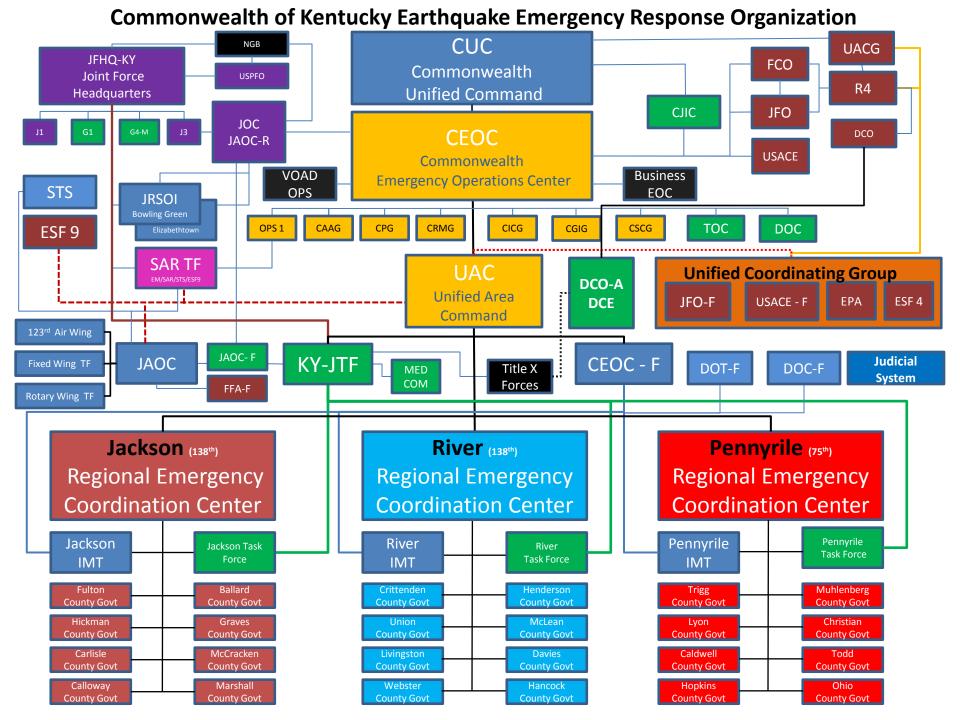
Mass Evacuation and Transportation

Commonwealth Unified Command (CUC)

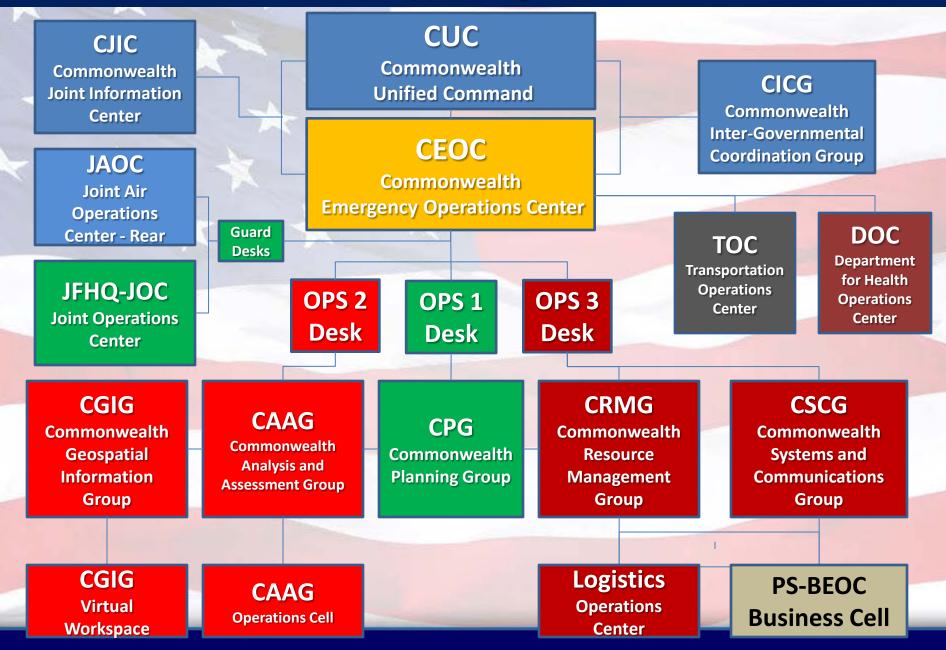
- State Responsibility meeting the Citizen/Local Government Requirements
- Commanded by the Governor
- Standing Members The Adjutant General,
 Director, Division of Emergency Management
- Additional Cabinet Representative as required
- Commonwealth Unified Command Brief (Battle Rhythm 1600)

Commonwealth Emergency Operations Center (CEOC)

- Responsible for (Communications, Collaboration, Coordination):
 - Situational Awareness
 - Coordinating the actions of all state agencies
 - Supporting local requirements
 - Linking Actions with the Federal Government
- Actions directed and coordinated by KYEM Operations
- All Emergency Support Functions (ESF) are represented
- Direct Coordination of Commonwealth Group actions
- •Responsible for WebEOC Board Significant Actions Board,
 Task Assignment Board
- Coordinates the 3-Hour Status Report
- Issues Spot Reports



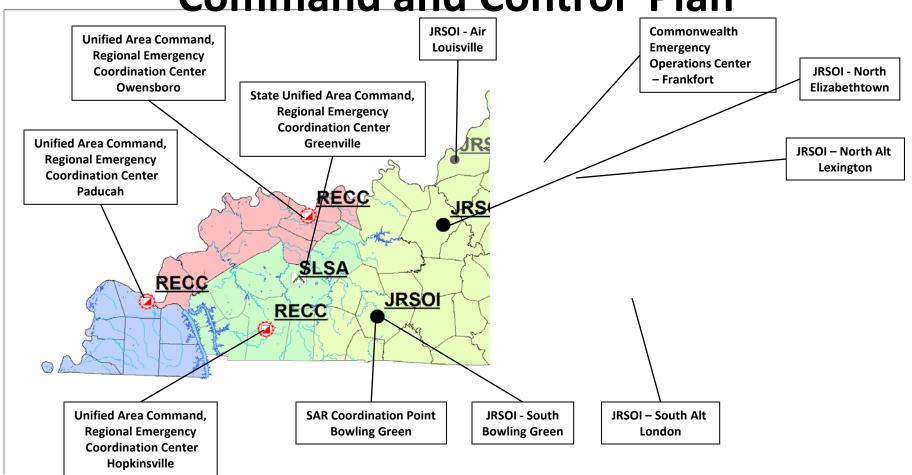
Kentucky CEOC Organization







Kentucky Emergency Management Command and Control Plan



Emergency Medical and Health Response Overview

Dr. William Hacker

Commissioner,

Department of Public Health

Cabinet for Health and Family Services

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	Total Casualties	Fatalities
KY-1	5,447	241
KY-2	513	11
KY-3	969	36
Total	6,726	287

Owensboro 6 1 2 1

en dersor

2,620

490

Breckin ridge

Louisville

Bullitt

Legend

Total Casualties

Event Occurs at 2:00 AM

D - 100

101 - 50D

501 - 2,750

Impacted Counties

Planning Areas

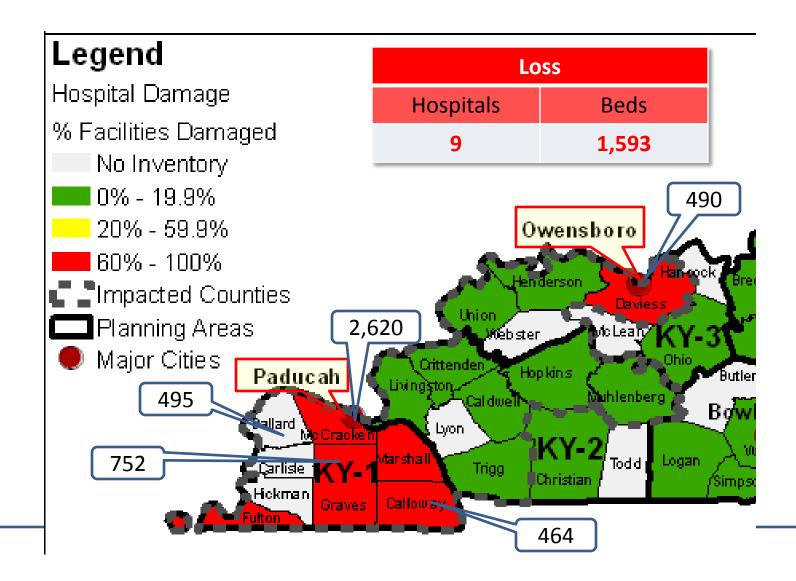
Major Cities



Union



Hospital Damage



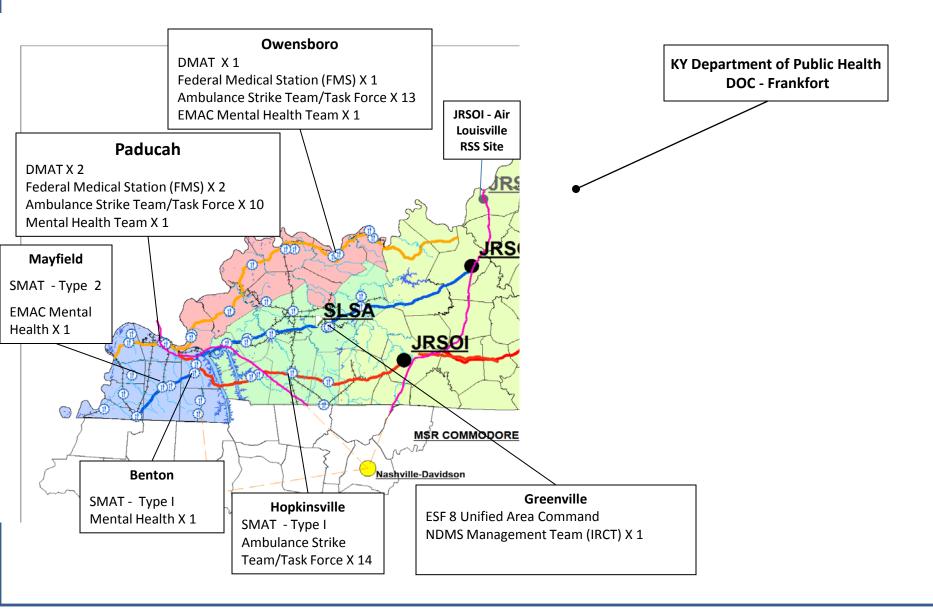


Long Term Care and Medically Fragile Non-Hospital Based KY Regions 1–3

Average Daily Utilization (2009)*	<u>Regions 1 - 3</u>	<u>Kentucky</u>
Long Term Care Licensed Beds	4,340	26,333
Cognitively Impaired	2,995	18,170
Excess Daily Capacity (excl. 1-3)		2,498
Personal Care Homes	2,459	4,447
Hospice	345	2,838
Home Health	3,966	39,003
Assisted Living	<u>722</u>	<u>3,356</u>
Total	11,832	75,977
* Source: Cabinet for Health and Family Services, Office of Health Policy		



ESF #8Health & Medical Command and Control Plan



Kentucky National Guard Response Overview

BG John W. Heltzel

Deputy Commander

Kentucky Joint Forces Headquarters





Kentucky National Guard Mission Statement

Upon occurrence of a catastrophic event along the New Madrid Seismic Zone, KYEM activates the State Emergency Operations Center, initiates use of state assets in support of local life-saving and recovery efforts, and ensures a coordinated response with Local, County, State and Federal agencies.



KYNG Mission

On order of the Governor, the Kentucky National Guard activates and deploys capabilities in State Active Duty status into the affected area, establishes communications, conducts reconnaissance and assessment, provides security support to civil authorities and distributes aid in order to assist Local, County, State and Federal authorities in providing relief and recovery to the citizens of the Commonwealth.

On order KYNG redeploys and returns to Baseline Operating Posture.



Commander's Intent

Intent: Purpose: To support local, county and state agencies to provide rescue, relief and recovery in response to a catastrophic earthquake. Response is in Six Phases:

- Phase 0 Shape
- Phase 1 Immediate Action
- Phase 2 Relief
- Phase 3 Restoration
- Phase 4 Stabilization
- Phase 5 Long-Term Recovery

End State: The effects of the incident have abated to the point that the Governor determines that civil authorities no longer require military forces to respond. The Governor directs the TAG to return the KYNG to Baseline Operating Posture. Units redeploy with no loss or damage of equipment and no serious injury to National Guard or civilian personnel. The KYNG resets, resumes Baseline Operating Posture, and is prepared for the next incident.

Phase 0 - Shape

- KYNG maintains situational awareness and preparedness in order to respond. Upon occurrence of an earthquake the KYNG immediately transitions to Phase 1.
- Key Phase 0 Tasks:
 - Coordination at all echelons with county, State and Federal agencies
 - Review and update OPLAN annually
 - Exercises, Test Alerts, updating unit status, contact info, etc.



Phase 1 - Immediate Action

- Immediate Actions to save lives and "change the outcome." Initiated with 6.0 or higher earthquake or on order from the Governor.
- KYNG support requests forwarded from CEOC to JOC to units
- Task Organization = Command Plan
- On order transition to Phase 2



Phase 1 - Immediate Action

Key Tasks:

- Activate and Deploy the Kentucky National Guard
- Conduct ground and aerial reconnaissance and damage assessment for KYEM to set conditions for pushing support into the affected area
- Assessment of available (on-hand) capabilities
- Self-activation of KYNG units in the affected area
- Deploy additional forces into the affected area
- Link-up at unit level with county political and emergency management leadership
- Establish C-Groups
- Initiate movement of JTF Hqs, Bde and Bn Hqs to pre-planned primary or alternate locations
- Establish communications from the affected area to KYEM and the JOC
- Provide immediate response to save lives, mitigate suffering, and set conditions for a comprehensive relief, restoration and stabilization effort
- Initiate EMAC Requests



Phase 1 – Self Activation, Deployment of Additional Forces

- Units within affected area self-activate, link-up with home county EOC and provide immediate support within capabilities.
- Units outside affected area deploy to pre-designated counties, provide support within capabilities.
- Units initially deploy as "General Purpose" troops.
- Anticipated Initial Mission set:
 - Search and Rescue
 - Route clearance
 - Security
 - Transportation
 - Assessment

Phase 1 – Self Activation and Deployment of Additional Forces

Ballard - 20th SF

- Crittenden D/1 HHC/206th EN
- Caldwell D1/A/206th EN

- Calloway 438th MP Co
- Daviess HHC 206th EN

Christian – D1/A/149th BSB

- Carlisle A/1-149 IN
- Hancock A/1-623 FA

Hopkins – 130th EN

- Graves Wpns/1-149 IN •
- Henderson D2/307th CRC
- Lyon 223d MP Co

- Hickman **B/1-149** IN
- Livingston A/2-138 FA

Muhlenberg – 307th CRC

- Fulton C/1-149 IN
- McLean D2/HHC/1-149 IN
- Ohio B/1-623 FA

- Marshall A/149th BSB
- **Union B/2-138th FA**

Todd – 176/177/178 FFT

- McCracken 2113th TC •
- Webster C/2-138th FA
- Trigg D1/307th CRC

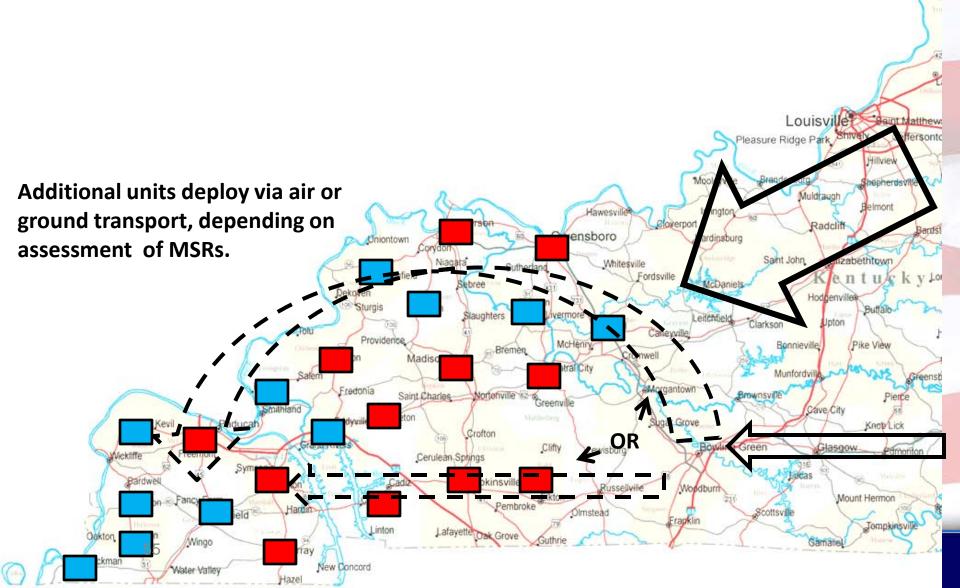
Designated units support assigned counties with available capabilities as General Purpose Forces.

- Units in red self-activate and immediately respond.
- Units in blue activate and deploy NLT H+12 (dependent on assessment).





Phase I – Immediate Response





Phase 2 - Relief

- Focused on life-saving and life sustainment.
- Mitigate near-term human suffering, provide water, food, shelter, sanitation, medicine, etc., and assess affected areas for restoration ops
- JFLCC and JFACC assume control over all military operations
- Task Organization JTF with three (3) Bde-sized Area Commands

- Anticipated Key Tasks:
- Establish Area Commands NLT D+3
- Assist/coordinate Search and Rescue
- Establish and Operate PODs
- Transport of displaced persons
- Security
- Establish MSRs
- Transport commodities and relief supplies
- Initiate JRSOI

Phase 2 – Joint Task Force- KY Area of Operations



Phase 3 - Restoration

- Focused on life sustainment, restoration of key infrastructure and setting conditions for sustained operations.
- Task Organization JTF with three (3) Bde-sized Area
 Commands. Brigade Task Force composition TBD by METT-TC

- Anticipated Key Tasks:
- Operate PODs
- Assist civil authorities in managing base camps
- Security
- Transport commodities and relief supplies
- Assist in restoration of key infrastructure
- JRSOI of reinforcing and relief forces
- On order Conduct Relief in Place



Phases 4 and 5

Phase 4 - Stabilization

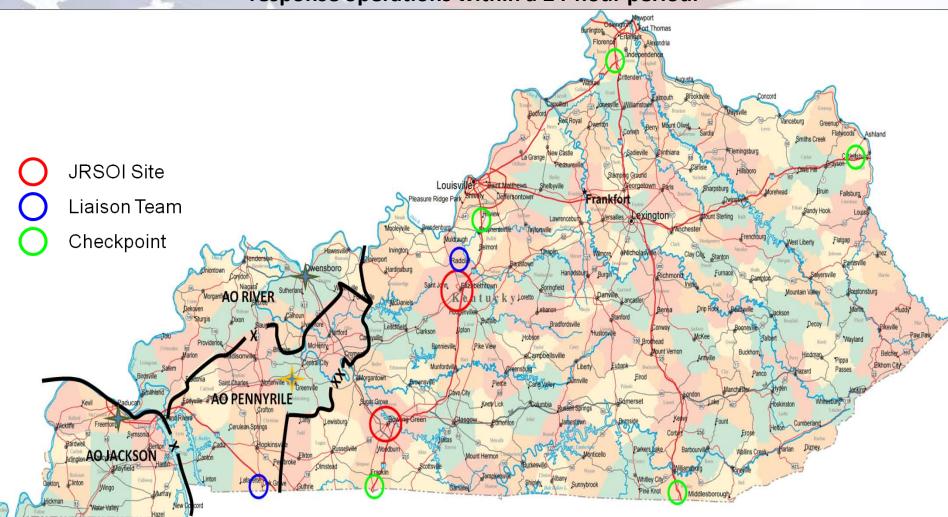
- Restore stable government organizations
- JTF-KY and Area
 Commands redeploy.
- KYNG support requests from CEOC to JOC to units.
- Task reverts to Command
 Plan

Phase 5 - Recovery

- Transfer to civil authority. Military forces redeploy and reset.
- CEOC stands down and transfers recovery effort to Commonwealth Cabinet officials
- KYNG support requests managed per SAD SOP

JRSOI Assets Locations

Receive, process and integrate supporting forces into or out of ongoing domestic disaster response operations within a 24-hour period.



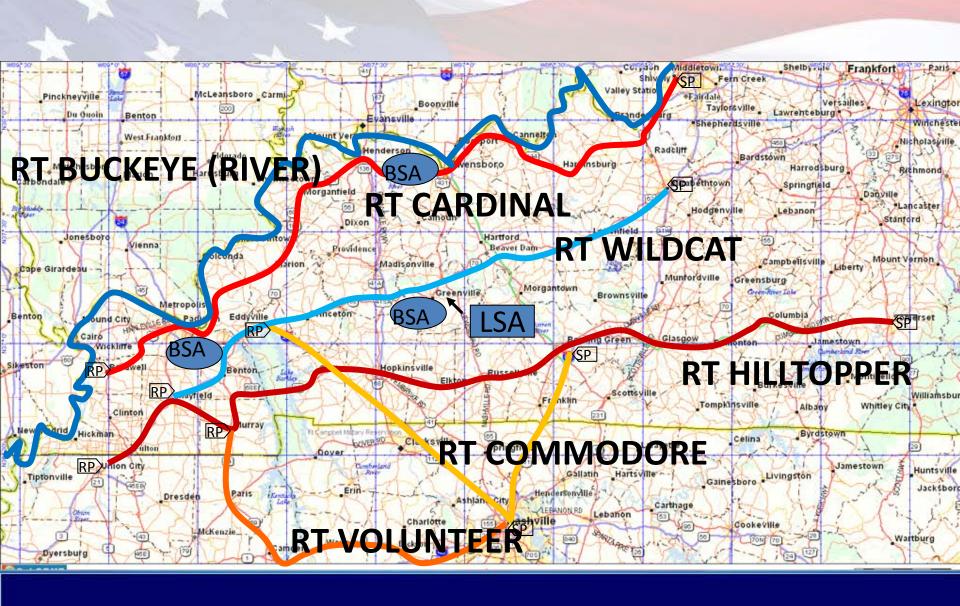
Establishing and Sustaining Operations Key Principles

Improvisation

Economy

Accountability

Main Supply Routes



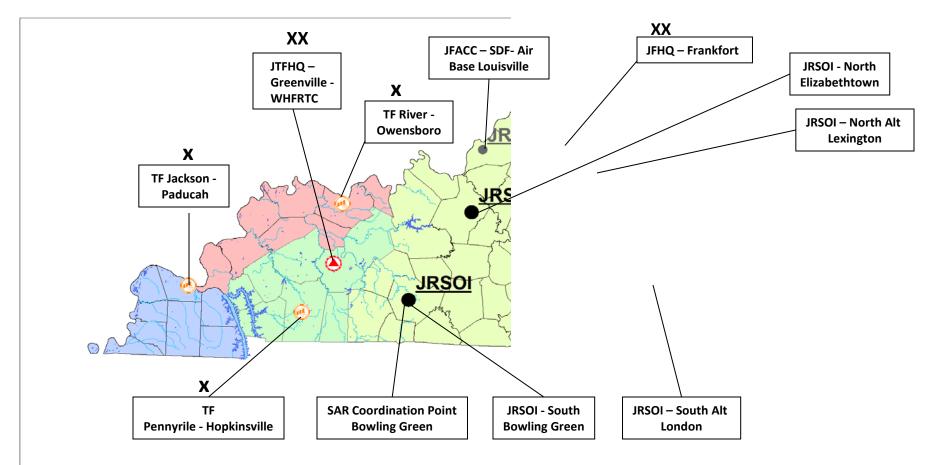
Way Ahead

- Exercise current OPLAN during National Level
 Exercise 14-20 May 2011
- Capture lessons learned during the AAR process
- Revise and republish OPLAN as the KYNG "on-the-shelf" response plan
- Review and update annually





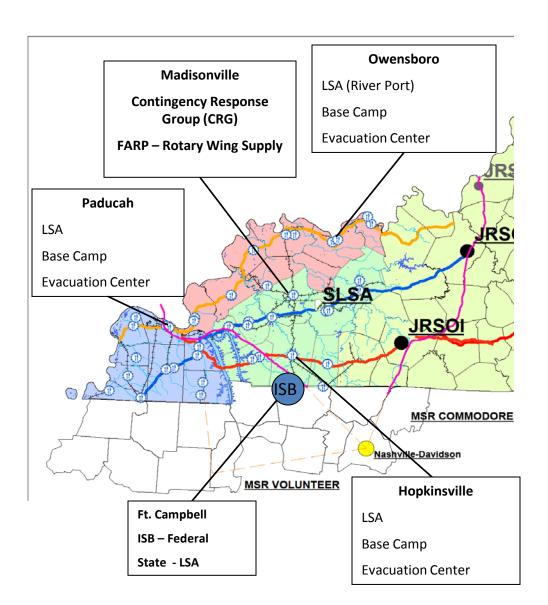






Kentucky Logistics Plan





Unified Area Command & Regional Emergency Coordination Center Complex Emergency Management Response Overview County Response Requirements

Mr. Harry James

Planning Branch Chief, Operations



Command & Control

"A Team of Teams – With One Mission: Protecting our Commonwealth"

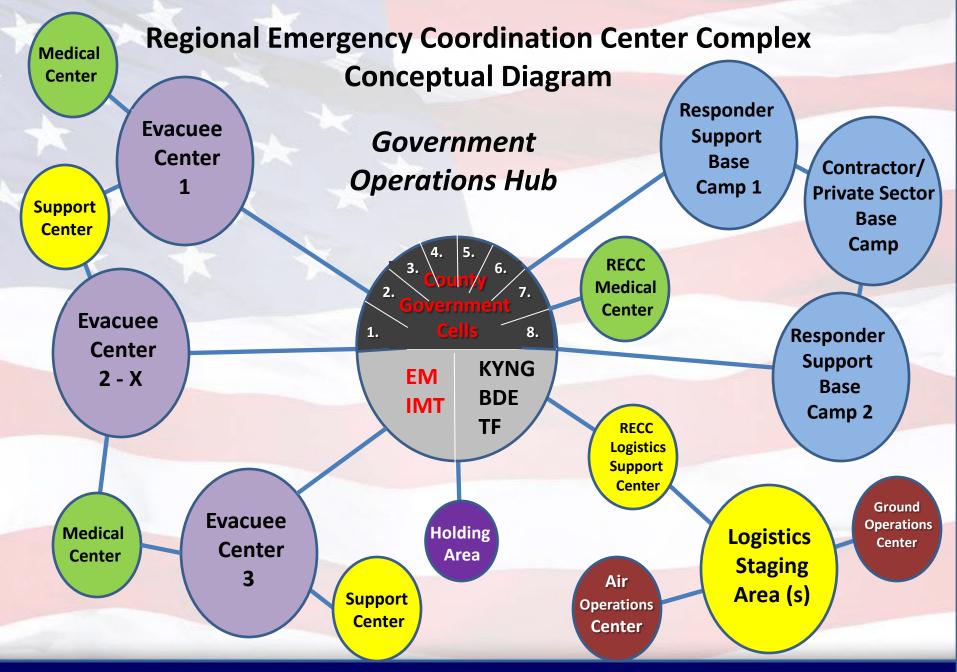


RECC Requirements

Planning Requirements for Emergency Force and Evacuation Support

- CEOC-F Regional IMT
- BDE Task Force HQ
- BSB Support Battalion
- Base Camp for Support Forces and Management Team
- Base Camp for Private Sector
- Support for up to 8 County Government Modules
- Multiple Evacuation Centers with Housing
- Road Network Support
- Air Resupply and Air Ambulance Support
- Drop Zone Support
- Power Infrastructure Connection/Generator
- Water Bulk Water Handling Capabilities/Connection to Infrastructure
- Sewer
- Communications Emergency and connection to infrastructure
- Dining Facilities
- Security
- Medical and Pharmacy

Commonwealth Emergency Management Organization

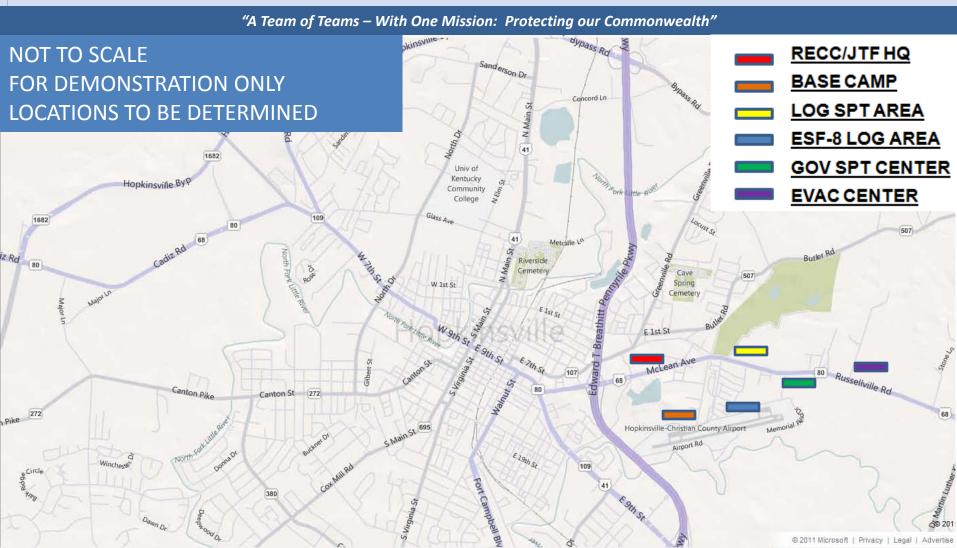


Commonwealth Emergency Management Organization



Done

RECC - Complex



Internet | Protected Mode



County Missions

"A Team of Teams – With One Mission: Protecting our Commonwealth"

Response

- Establish Command and Control
- Establish Adequate Communication
- Accomplish Rapid Damage and Situational Assessment
- Provide for Life Saving and Emergency Sheltering
- Achieve the Ability to Manage and Support External Assistance



County Missions

"A Team of Teams – With One Mission: Protecting our Commonwealth"

Stabilization & Sustainment

- Establish General Security
- Provide for Basic Community Medical Needs
- Provide Minimum Lifeline Infrastructures
- Re-establish and Maintain Community Wide Basic Emergency Response Capability
- Achieve the Ability to Manage and Provide Basic Support to Citizens
- Activate Community Long Term Recovery Capability

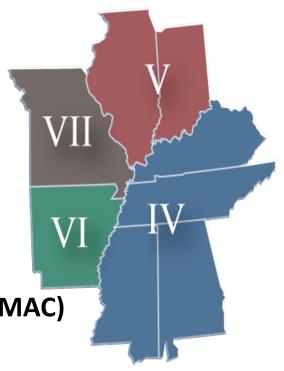




NLE 2011 New Madrid Seismic Zone:

Civil Entities Participating in NLE 2011

- Federal, State, Local partnership
- Central US Earthquake Consortium (CUSEC)
 - AL, AR, IL, IN, KY, MS, MO, TN
- DHS components
- FEMA HQs and Regions IV, V, VI, VII
- Federal and Sector Specific Agencies
 - Critical Infrastructure
 - SANDIA National Laboratory
- Emergency Management Assistance Compact (EMAC)
- Local governments
- Business, Industry, and Voluntary Organizations
- Mid-America Earthquake Center (MAEC)
- Institute for Crisis, Disaster & Risk Management (GWU)
- Innovative Emergency Management (Contractor)
 - FEMA funded full time planners in each State/Region/HQ



Guard County Mission Set

- Liaison with Senior Elected Official
- Discuss the Guard Roles and Capabilities
- Update County Emergency Information –
 Coordinate with County EM and FR Community
- Review and Document POD Locations
- Emergency Evacuation Routes
- Critical Data on Air Fields (Addition)
- Alternate EOC Location
- Shelter Location Verification

BDE Task Force Mission

- RECC Implementation Plan
- RECC Physical Locations Primary and Secondary
- Depict the solution graphically
- Document the solution, coordination points and timetable to achieve the desired capability



National Level Exercise

"A Team of Teams – With One Mission: Protecting our Commonwealth"

- •16-20 May, 2011
- Monday Events Alert, Assessment, COMEX
- Tuesday Events Life Saving
- Wednesday Events Emergency Med/Evac
- Thursday Events Sustainment Operations





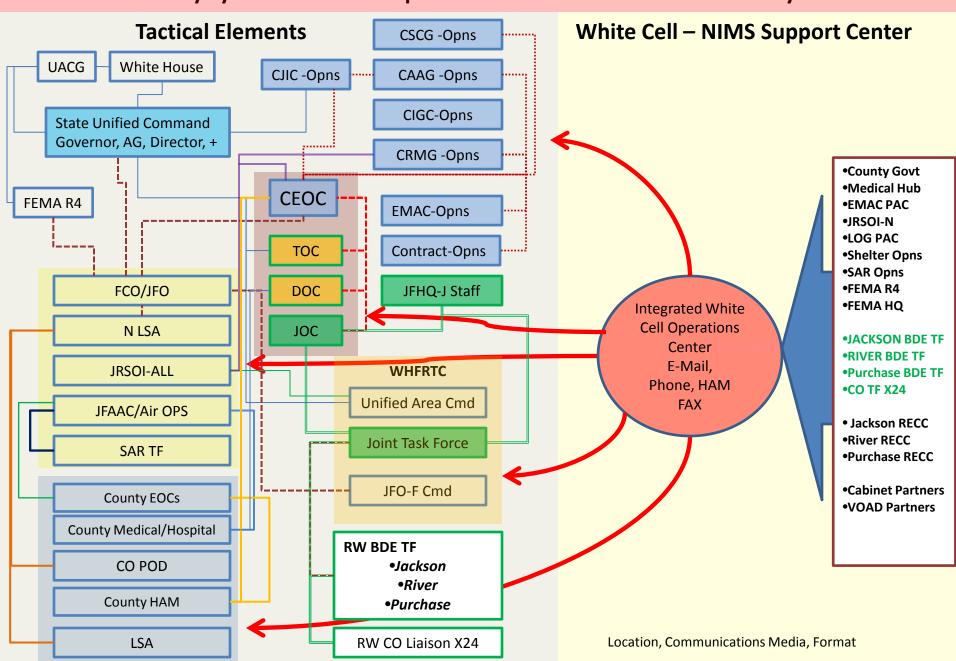
National Level Exercise

"A Team of Teams – With One Mission: Protecting our Commonwealth"

- Exercise Objectives
- Battle Rhythm
 - •12 Hour Days Main Inject Play 8-1130 CST
- Training Opportunities
- Level of Intensity Flexible



Kentucky Synchronized NLE Operations and Communications Overlay



Questions and Discussion

